	Interview Summary	**Application No.** 10/780,772	**Applicant(s)** SHIMADA ET AL.
		Examiner Reginald Bragdon	**Art Unit** 2189

All participants (applicant, applicant's representative, PTO personnel):

(1) *Reginald Bragdon (PTO)*.   (3)*Dan Stanger*.

(2) *Horace Flournoy (PTO)*.   (4)*Hiroshi Kawano*.

Date of Interview: *29 June 2006*.

Type: a)☐ Telephonic   b)☐ Video Conference
      c)☒ Personal [copy given to: 1)☐ applicant   2)☒ applicant's representative]

Exhibit shown or demonstration conducted: d)☒ Yes   e)☐ No.
      If Yes, brief description: *draft copy of proposed claims*.
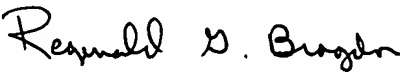
Claim(s) discussed: *1*.

Identification of prior art discussed: *Doing et al. (2003/0009648)*.

Agreement with respect to the claims f)☐ was reached.   g)☐ was not reached.   h)☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *Briefly discussed proposed claims and how they distinguished from Doing et al. Based on a cursory review of the reference and the proposed claim 1 it appears the claims may distinguish from the reference. The examiner indicated that the final determination as to withdrawing the prior art rejection was subject to a review of the final claims presented and the written remarks accompanying them* .

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

REGINALD BRAGDON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Examiner Note: You must sign this form unless it is an
Attachment to a signed Office action.   _____
                                                          Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)
In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

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The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
– Application Number (Series Code and Serial Number)
– Name of applicant
– Name of examiner
– Date of interview
– Type of interview (telephonic, video-conference, or personal)
– Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
– An indication whether or not an exhibit was shown or a demonstration conducted
– An identification of the specific prior art discussed
– An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
– The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

DRAFT

1.   (Currently amended) A storage to be connected to a network, comprising:

a host interface which is arranged to be connected to a host computer and the network and to receive file access from the host computer;

a plurality of disk drives; and

a control unit which translates data of the file access into block data and controls the plurality of disk drives on the basis of the block data, the control unit including a first processor which translates the data of the file access into the block data, a second processor which controls the plurality of disk drives on the basis of the block data, a cache memory temporarily storing the block data sent from the second processor, and a disk interface which connects the cache memory and the plurality of disk drives and sends the block data temporarily stored in the cache memory to the plurality of disk drives;

wherein the control unit logically partitions into units the host interface, the first processor, the second processor, the cache memory, the disk interface, and the plurality of disk drives, allocating a logically-partitioned portion of each of the host interface, the first processor, the second

processor, the cache memory, the disk interface, and the
plurality of disk drives to each of the units, and causes ~~the~~
~~partitioned host interface, the partitioned first processor,~~
~~the partitioned second processor, the partitioned cache~~
~~memory, the partitioned disk interface, and the partitioned~~
~~plurality of disk drives~~ the units to operate as a plurality
of virtual storages independently.

    2.   (Previously presented) A storage according to claim
1, wherein the control unit further includes a plurality of
cache memories, and the plurality of cache memories is
logically partitioned and allocated to the respective
plurality of virtual storages.

    3.   (Canceled)

    4.   (Currently amended) A storage according to claim 2,
wherein the first processor executes a first hypervisor which
performs the logical partitioning of the host interface and
the first processor, and

    wherein the second processor executes a second hypervisor
which performs the logical partitioning of the plurality of

cache memories, the disk interface, the plurality of disk devices and the second processor.

5.   (Previously presented) A storage according to claim 4, wherein the control unit further includes a plurality of memories which are used by the first processor and a plurality of communication units which connect the first processor and the second processor,

wherein the plurality of memories are logically partitioned by the first hypervisor and the plurality of communication units are logically partitioned by the second hypervisor.

6.   (Currently amended) A storage according to claim 2, wherein the first processor and the second processor execute a hypervisor which performs the logical partitioning of the host interface, the first processor, the plurality of cache memories, the second processor, the disk interface, and the plurality of disk drives.

7.   (Currently amended) A storage according to claim 1, wherein the control unit executes a hypervisor which performs the logical partitioning of the host interface, the first

processor, the second processor, the cache memory, the disk

interface, and the plurality of disk drives.

8.   (Previously presented) A storage according to claim

2, further connected to a supervising terminal,

wherein the control unit performs the logical

partitioning on the basis of information inputted from the

supervising terminal.

9.   (Currently amended) A storage according to claim 8,

wherein, if information to be inputted to the supervising

terminal is information to the effect that a host system using

the storage emphasizes data transfer rate, an amount of

allocation of the plurality of cache memories to a virtual

storage to be used by the host system among the plurality of

virtual storages is increased.

10.   (Currently amended) A storage according to claim 8,

wherein, if information to be inputted to the supervising

terminal is information to the effect that a host system using

the storage performs random access in a large area, an amount

of allocation of the plurality of cache memories to a virtual

storage to be used by the host system among the plural<u>ity of</u> virtual storages is reduced.

11. (Original) A storage according to claim 5 further connected to a supervising terminal,

wherein the control unit performs the logical partitioning on the basis of information inputted from the supervising terminal.

12. (Currently amended) A storage according to claim 11, wherein, if information to be inputted to the supervising terminal is information to the effect that a host system using the storage performs sequential continuous access, an amount of allocation of the plurality of cache memories and the plurality of memories which is used by the first processor to a virtual storage to be used by the host system among the plural virtual<u>ity of</u> storages is increased.

13. (Previously presented) A storage according to claim 8, wherein, if information to be inputted to the supervising terminal is information to the effect that a host system using the storage requires access to a smaller number of large files than that for which processor support to one of the virtual

storages is currently set for the host system, an amount of allocation of the first processor to the virtual storage to be used by the host system is reduced, and an amount of allocation of the second processor to the virtual storage is increased.

14. (Previously presented) A storage according to claim 8, wherein, if information to be inputted to the supervising terminal is information to the effect that a host system using the storage requires access to a larger number of small files than that for which processor support to one of the virtual storages is currently set for the host system, an amount of allocation of the first processor to the virtual storage to be used by the host system is increased, and an amount of allocation of the second processor to the virtual storage is reduced.

15. (Previously presented) A storage according to claim 11, wherein if information to be inputted to the supervising terminal is information to the effect that a host system using the storage requires sequential access to a larger file than that for which communication unit support to one of the virtual storages is currently set for the host system, an

amount of logical allocation of the plurality of communication

units to the virtual storage to be used by the host system is

reduced.

16.   (Currently amended)   A storage system comprising:

a storage comprising a host interface which is arranged

to be connected to a host computer and a network and to

receive file access from the host computer; a plurality of

disk drives; and a control unit which is arranged to translate

data of the file access into block data and to control the

plurality of disk drives on the basis of the block data, the

control unit including a first processor which translates the

data of the file access into the block data, a second

processor which controls the plurality of disk drives on the

basis of the block data, a cache memory temporarily storing

the block data sent from the second processor, and a disk

interface which connects the cache memory and the plurality of

disk drives and sends the block data temporarily stored in the

cache memory to the plurality of disk drives; and

a supervising terminal which is connected to the storage,

wherein the storage logically partitions into units the

host interface, the first processor, the second processor, the

cache memory, the disk interface, and the plurality of disk

drives on the basis of information inputted to the supervising

terminal, <u>allocating a logically-partitioned portion of each</u>

<u>of the host interface, the first processor, the second</u>

<u>processor, the cache memory, the disk interface, and the</u>

<u>plurality of disk drives to each of the units,</u> and operates

the ~~partitioned host interface, the partitioned first~~

~~processor, the partitioned second processor, the partitioned~~

~~cache memory, the partitioned disk interface, and the~~

~~partitioned plurality of disk drives~~ <u>units</u> as plural virtual

storages independently.

17.   (Previously presented) A storage system according

to claim 16, wherein the information inputted to the

supervising terminal is information on characteristics of

accesses of a computer using the storage, and the storage

calculates an amount of logical partitioning of resources

provided in the storage on the basis of the information on

characteristics of accesses inputted to the supervising

terminal, and performs the logical partitioning using a result

of the calculation.

18.   (Currently amended) A storage to be connected to a

network, comprising:

a host interface which is arranged to be connected to a

host computer and the network and to receive file access from

the host computer;

a plurality of disk drives; and

a control unit which translates data of the file access

into block data and controls the plurality of disk drives on

the basis of the block data,

wherein the control unit further includes a first

processor which translates the data of the file access into

the block data, a second processor which controls the

plurality of disk drives on the basis of the block data, a

plurality of cache memories temporarily storing the block data

sent from the second processor, a plurality of memories which

are used by the first processor, a plurality of communication

units which connect the first processor and the second

processor, and a disk interface which connects the plurality

of cache memories and the plurality of disk drives and sends

the block data temporarily stored in the cache memories to the

plurality of disk drives;

wherein the control unit logically partitions into units

the plurality of cache memories, the first processor, the

second processor, the host interface, the plurality of disk

drives, the plurality of memories, the plurality of

communication units, and the disk interface, <u>allocating a</u>

<u>logically-partitioned portion of each of the host interface,</u>

<u>the first processor, the second processor, the plurality of</u>

<u>cache memories, the plurality of disk drives, the plurality of</u>

<u>memories, the plurality of communication units, and the disk</u>

<u>interface,</u> and causes ~~the partitioned plurality of cache~~

~~memories, the partitioned first processor, the partitioned~~

~~second processor, the partitioned host interface, the~~

~~partitioned plurality of disk drives, the partitioned~~

~~plurality of memories, the partitioned plurality of~~

~~communication units, and the partitioned disk interface~~ <u>the</u>

<u>units</u> to operate as a plurality of virtual storages

independently.